

Atty. Docket No. PPW06-569DS
Serial No: 10/743,573

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Remarks

Applicant and his representatives wish to thank Examiner Smith for the examination of the present application and the detailed explanations in the Office Action dated July 11, 2006.

The present invention relates to a method for fabricating a metal-insulator-metal (MIM) capacitor comprising a first metal layer, a dielectric layer, and a second metal layer. The claimed method comprises etching the second metal layer, and etching the dielectric layer under conditions different from etching the second metal layer, to leave a residual dielectric layer over the first metal layer in an etched part of the dielectric layer (see Claim 1 as previously presented). By leaving a residual dielectric layer over the first metal layer in an etched part of the dielectric layer, the method may result in improved MIM characteristics, increased stability of the metal etching process, and increased margin for subsequent processes (see, e.g., paragraph [0026] of the present specification).

As discussed below, the Kiyotoshi reference (U.S. Patent No. 6,891,218) cited by the Examiner against independent Claim 1 is not an available reference. The available references cited against the present claims neither disclose nor suggest, alone or taken together, a method for fabricating a MIM capacitor comprising etching a dielectric layer (of the capacitor) under conditions different from etching the top metal layer, to leave a residual dielectric layer of the bottom metal layer in an etched part of the dielectric layer. Consequently, the present claims are patentable over the available cited references.

The Rejection of Claims 1, 2, 19, 21, and 22 under 35 U.S.C. § 102(b)

The rejection of Claims 1, 2, 19, 21, and 22 under 35 U.S.C. § 102(b) as being anticipated by Kiyotoshi is respectfully traversed. Kiyotoshi is not prior art to the present application. The U.S. filing date of Kiyotoshi is after the earliest priority date of the present application (December 24, 2002). Therefore, the rejection of Claims 1, 2, 19, 21, and 22 as being unpatentable over Kiyotoshi should be withdrawn.

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Korean application no. 10-2002-0083531, to which the present application claims priority, was filed in the Korean Intellectual Property Office on December 24, 2002. A certified copy of Korean application no. 10-2002-0083531 was filed with the present application on December 22, 2003, and Applicants' claim to the priority date of December 24, 2002 has been acknowledged in the present application (see the attached printout from the "Foreign Priority" tab in the USPTO PAIR website [<https://sportal.uspto.gov/scure/myportal...>] for the present Application No. 10/743,573; a brief review of the drawings for Korean application no. 10-2002-0083531 and those of the present application show substantial similarities).

A certified translation of the priority document, Korean Application No. 10-2002-0083531 filed December 24, 2002, was submitted on September 15, 2005 to perfect the claim to priority in the present application under 37 C.F.R. § 1.55. Therefore, Kiyotoshi is not prior art with respect to the present application. Accordingly, the rejection of independent Claim 1 and dependent Claims 2, 19, 21, and 22 under 35 U.S.C. § 102(b) as being anticipated by Kiyotoshi is improper, and should be withdrawn.

The Rejection of Claims 5-18 and 20 under 35 U.S.C. § 103(a)

The rejections under 35 U.S.C. § 103(a) of Claims 5 and 12-18 as being unpatentable over Kiyotoshi in view of Hwang, Claims 6 and 7 as being unpatentable over Kiyotoshi in view of Ouellet, Claims 8-10 as being unpatentable over Kiyotoshi in view of Allman, Claim 11 as being unpatentable over Kiyotoshi in view of Tee, and Claim 20 as being unpatentable over Kiyotoshi in view of Subramanian, are respectfully traversed. As discussed above, Kiyotoshi is not an available reference against independent Claim 1. Therefore, independent Claim 1, and dependent Claims 5-18 and 20, are patentable over the cited references.

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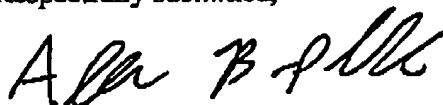
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Conclusions

In view of the above amendments and remarks, all bases for objection and rejection are believed to be overcome, and the application is believed to be in condition for allowance. Early notice to that effect is earnestly requested.

If it is deemed helpful or beneficial to the efficient prosecution of the present application, the Examiner is invited to contact Applicant's undersigned representative by telephone.

Respectfully submitted,



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10/743,573 Method for fabricating a capacitor using a metal insulator metal structure

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Foreign Priority

Country	Priority	Priority Date
REPUBLIC OF KOREA	10-2002-0083531	12-24-2002

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